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- (54) Title of the invention: Transmission method for program list data and transmission and reception device
- (57) Abstract:

Purpose: To reduce the reconstitution processing of program list data and to shorten prescribed indication time.

Constitution: On a transmission side, an encoding and data generation means 20 encodes and transmits program list data which are accumulated and preserved in an accumulation and holding part 10. On a reception side, formation information on a broadcasting station, which is received by a data reception device 40, is stored in a data accumulation part 52 and network basic formation information and formation information of the respective broadcasting stations are extracted from received formation information of the broadcasting station based on belonging network information. Program list basic data and program list minute data, which constitute program information, are stored in data accumulation parts 53 and 54.

A data synthesis part 59 synthesizes either formation information of the respective broadcasting stations or network basic formation information in accordance with a condition that formation information on the respective broadcasting stations are adopted when both formation information have the same program start time.

[Claims]

[Claim 1] In transmitting the TV schedule data used by the broadcast receiving side in a transmitting side, while dividing TV schedule data into the organization information data that consist of the broadcasting station name of a program, a broadcast day, broadcast time of day, etc., and program information data that a program name, the contents time amount of a program, and a viewer need at the time of program selection, such as accompanying information. Add a broadcasting station identifier and a program identifier to the mentioned above organization information data and add a program identifier to the mentioned above program information data, respectively, and it transmits. The transmission approach of the TV schedule data characterized by reconstitution processing of the TV schedule data of the specific broadcasting station that a viewer chooses from the mentioned above both information data, referring to the mentioned above each identifier in a receiving side.

[Claim 2] The sending set for operation of the approach according to claim 1 characterized by containing a means to divide TV schedule data into organization information data and program information data, a means to add a broadcasting station identifier and a program identifier to the separated organization information data and to

transmit to them and a means to add a program identifier to the separated program information data, and to transmit to them.

[Claim 3] The receiving set for operation of the approach according to claim 1 characterized by containing a means to reconstitute the TV schedule data of the mentioned above selected specific broadcasting station from the organization information data received referring to a means to select the specific broadcasting station that user wishes to view TV schedule data and a broadcasting station identifier and a program identifier, and program information data.

[Detailed description of the invention]

[0001]

[Industrial application] This invention relates to the TV schedule data-broadcasting system that offers TV schedule service.

[0002]

[Description of the prior art] A television set receives the broadcast TV schedule data and the system that receives TV schedule service is proposed. In this system, since the broadcasting station name and the information on broadcasting station like a channel even if many broadcasting stations that completely take the same programming existed, as for TV schedule data, parts for each broadcasting station of all were transmitted according to the individual.

[0003]

[Problems to be solved by the invention] Thus, the necessary transmission amount of data is the several times as many broadcasting station of the TV schedule amount

of data to one broadcasting station as this. For this reason, the transmission capacity of a transmission line and the memory for recording of a receiver will increase or transmission duration will increase. Also, when the contents of a program itself were changed by modification of a performer etc., all TV schedule data had to be updated.

[0004] The purpose of this invention solves the above problems, reduces the reconstitution processing of data, and is to offer the TV schedule data-broadcasting system that can shorten a prescribed indication time.

[0005]

[Means for solving the problem]

1) In this invention transmitting the TV schedule data used by the broadcast receiving side. In a transmitting side, while dividing TV schedule data into the organization information data that consist of the broadcasting station name of a program, a broadcast day, broadcast time of day, etc., and program information data which a program name, the contents time amount of a program, and a viewer need at the time of program selection, such as accompanying information. It is characterized by reconstitution processing of the TV schedule data of the specific broadcasting station that a viewer chooses from the mentioned above both information data, adding a broadcasting station identifier and a program identifier to the mentioned above organization information data and adding a program identifier to the mentioned above program information data, respectively, transmitting, and referring to the mentioned above each identifier in a receiving side.

[0006] 2) The sending set for operation of an approach according to the above 1 is characterized by containing a means to divide TV schedule data into organization information data and program information data, a means to add a broadcasting station identifier and a program identifier to the separated organization information data and to transmit to them, and a means to add a program identifier to the separated program information data, and to transmit to them.

[0007] 3) It is characterized by the receiving set for operation of the approach according to one above mentioned publication containing a means to reconstitute the TV schedule data of the mentioned above selected specific broadcasting station from the organization information data received referring to a means to select the specific broadcasting station that user wishes to view TV schedule data and a broadcasting station identifier and a program identifier and program information data.

[0008]

[Function] In this invention, recording preservation of the TV schedule data is carried out with a recording preservation means with a sending set. Encoding of the TV schedule data of a recording preservation means with a coding means, and the encoded TV schedule data are sent out with a sending-out means. The organization information and program information on a broadcasting station that were received with the receiving set are stored in the 1st storing means. Based on affiliation network information, network basic organization information and the organization information on each broadcasting station are extracted from the organization information on the

received broadcasting station. Either the organization information on each broadcasting station or network basic organization information, when it has the program start time when both organization information is the same, according to the conditions of adopting the organization information on each broadcasting station, it takes out to time series and takes out with a means and the program information based on the organization information and this information that were taken out is stored in the 2nd storing means.

[0009]

[Example] Next, the example of this invention is explained with reference to a drawing.

[0010] Drawing 1 shows one example of this invention. In drawing 1, 10 is the accumulation and holding part and it is for carrying out recording preservation of the TV schedule data. The TV schedule data by which recording preservation was carried out are constituted by the organization information and program information on work equipment proper and show the configuration of organization information and program information to drawing 3. 20 is encoding and data generation means that encodes TV schedule data into the data format suitable for transmission and changes coding TV schedule data into the packet signal of fixed length. As a data coding method in this case, different coding methods, such as a graphic form including an alphabetic character and a still picture or voice, can be adapted.

[0011] 40 is a data reception device and is constituted by the selection circuit 42 with signal transformation and the packet decode separation part 41. After signal

transformation and the packet decode separation part 41 receive TV schedule data digital transmission on the street and carries out the error correction of the TV schedule data, it performs inverse transformation by the signal transformation part and the highly uniform of encoding and data generation means 20, changes it into the packetized TV schedule data, unifies one or more obtained packets, and restores coding TV schedule data. A selection circuit 42 chooses only specific data according to actuation of the selection designating device 60 by the user.

[0012] The selection designating device 60 is constituted by the remote controller part 61 and the central data processing part 62. The remote controller part 61 performs remote control. The central data processing part 62 directs the TV schedule that a user wishes, receives the signal from the remote controller part 61, and outputs the corresponding control instruction, and controls and manages the whole receive part integrative.

[0013] 50 is recording processor and it is constituted by the data separation part 51, the data accumulation parts 52, 53 and 54, the data selection parts 55, 56 and 57, the recording part 58 and the synthesis part 59. The data separation part 51 divides into organization information, the TV schedule master data and TV schedule detail data the coding TV schedule data chosen by the selection circuit 42 based on a data identifier. The data accumulation parts 52, 53 and 54 are for storing the organization information acquired by the data separation part 51 separating, the TV schedule master data and TV schedule detail data, respectively.

The synthesis part 59 is compounded to one TV schedule data from the organization information taken out by the data selection parts 55, 56 and 57, the TV schedule master data and TV schedule detail data. In the synthesis part 59, it is possible to save the constituted TV schedule data once using the recording part 58 if needed, and to use this recording data to the presentation demand of the multiple times to the same TV schedule from a user.

[0014] 70 is decoding and displaying process equipment, and decodes and carries out the display process of the TV schedule data of the synthesis part 59 or the recording part 58. 80 is a display and it is for displaying based on the signal from decoding and displaying processing part 70.

[0015] Drawing 2 shows the configuration of the synthesis part 59 shown on drawing 1. In drawing 2, 5901 is memory and it is for storing the information chosen by the data selection part 55. 5902 is memory and it is for storing the information chosen by the data selection part 55 according to the affiliation network. 5903 is the switch part and it is for switching and choosing the data from memory 5901 and 5902 and the selection parts 56 and 57. 5904 is memory and it is for storing the data from the switch part 5904 and the data from the recording part 58. 5905 is CPU (central processing unit) controlling the writing of the data of memory 5901, 5902 and 5904, read-out and the data accumulation parts 52, 53 and 54 and the data selection parts 55, 56 and 57 according to the directions from the selection designating device 60, a switch of the switch part 5903 is controlled.

[0016] First, actuation of a transmitting side is explained. It encodes with encoding and data generation means 20 and the TV schedule data of the accumulation and holding part 10 are changed into the packet of fixed length. This packet consists of the packet header part that shows the description of the data itself, such as a data identifier that shows a property or the purpose of that data and a data length, and data division of the TV schedule data itself. A packet header is automatically given by encoding and data generation means 20. And the packet including TV schedule data of these single strings is reorganized by the signal format that was most suitable for the digital transmission way 30 with encoding and data generation means 20, and an error correcting code is added if necessary. For example, when transmitting TV schedule data by digital transmission ways, such as a data channel of satellite broadcasting service and MUSE high-definition television broadcasting, an interleave is given and it changes into a bit stream, after adding the error correcting code by the difference set cyclic code.

[0017] Next, actuation of a receiving side is explained. If the TV schedule data on the digital transmission way 30 are received by the data reception device 40, to input data, the signal transformation and the packet decode separation part 41 of a data reception device 40 will perform an error correction and inverse transformation by the signal transformation part and the highly uniform of encoding and data generation means 20 will be performed.

Subsequently, it changes into the packetized TV schedule data, a plurality of packets that constitutes this packetized

TV schedule data are unified further, and coding TV schedule data are restored.

[0018] And only specific data are chosen from this coding TV schedule data by the selection circuit 42 according to selection directions of the user from the selection designating device 60. For example, since there are an area, a block name, etc. by which the broadcasting station is characterized as shown on drawing 3, only the data of classification that users, such as organization information only on a user's required area, need can be chosen as organization information from the organization information for the whole country. Recording processing of the specific data chosen by the selection circuit 42 is carried out by the recording processor 50. That is, it separates into the organization information shown on drawing 3 based on a data identifier by the data separation part 51, the TV schedule master data, and TV schedule detail data, and coding TV schedule data are stored in the data accumulation parts 52, 53 and 54, respectively. And according to selection directions of the user from the selection designating device 60, the TV schedule data of the broadcasting station that a user wishes by reference using a broadcasting station identifier are taken out from the data accumulation parts 52, 53 and 54 by the data selection parts 55, 56, and 57 and in one TV schedule data, it is compounded by the synthesis part 59 by reference using the program identifier shown on drawing 4.

[0019] Next, the data synthesis procedure by CPU 5905 of the synthetic part 59 shown on drawing 2 is explained. The "organization information on a broadcasting station" aiming at the composition taken out from the data

accumulation part 52 by the data selection part 55 is stored in memory 5901. Also, according to the affiliation network information on the “organization information on a broadcasting station”, the “network basic organization information” taken out from the data accumulation part 52 by the data selection part 55 is stored in memory 5902. And the broadcasting station identifier of the “organization information on a broadcasting station” stored in memory 5901, a broadcast day, a broadcasting station name, an area and a block name, a channel number and the information on an affiliation network are stored in memory 5904.

[0020] The earliest program start time b1 is searched among the program start time of each program of the “network basic organization information” stored in memory 5902. And while carrying out the additional writing of the information in connection with the program that has the earliest program start time among the program start time that searched and was searched and obtained from the start time of each program of “the organization information on a broadcasting station” in which program start time earlier than the end time of the program that has the earliest start time b1 searched and obtained was stored by memory 5901 and the program start time b1 at memory 5904, the information concerned is deleted from memory 5901 or memory 5902.

[0021] Subsequently, the latest program end time e1 is searched among the end time of each program stored in memory 5904. And the earliest program start time b2 is searched from the program start time of each program of the “network basic organization information” in which it

was stored by memory 5902 among the program start time after program end time e1 searched and obtained, and the end time Tx of the program that has the program start time b2 is taken out. While carrying out the additional writing of the information in connection with the program that has the earliest program start time among the program start time that searched and was searched and obtained from the start time of each program of the “organization information on a broadcasting station” in which program start time earlier than this program end time Tx was stored by memory 5901 and the program start time b2 at memory 5904, the information concerned is deleted from memory 5901 or memory 5902.

[0022] From now on, the above procedure is repeated. However, when the data that is replaced with the latest program end time at the program end time Tx among the information in connection with each program stored in memory 5904 and are chosen from memory 5901 when the data chosen from memory 5902 are lost, always suppose the information on memory 5902 at memory 5904 that additional writing is carried out. It continues until the information that newly adds such a procedure is lost.

[0023] And sequential selection of the program identifier of the information in connection with each program is made from the head of memory 5904 among the information on memory 5904, and the program master data is taken out from the data accumulation part 53 by the data selection part 56 among the program information according to each identifier, additional writing is carried out at memory 5904, and TV schedule detail data are taken out from the data accumulation part 54 by the data

selection part 57 and carry out additional writing at memory 5904. Since the output of the synthesis part 59 is encoded TV schedule data, recognized decoding processing is performed by decoding and displaying processing equipment 70 and it is further changed into the data format suitable for a display, finally is displayed on a display 80 by the selection signal 67.

[0024] Also, the digital transmission way 30 under above mentioned explanation is sufficient, such as a cable system, a wireless system and a package system, is natural.

[0025] Thus, since it constituted, the TV schedule of a user's living area etc. can output only the data that a user uses most frequently to the recording processor 50 by the selection circuit 42. Thus, the memory space for recording is highly reducible that what is necessary is just to carry out recording preservation only of some kinds of the organization and program information to which it can view regionally. On the contrary, all the TV schedule data transmitted by directions of a user can be referred to arbitration, and use of the TV schedule that was excellent in flexibility with small recording memory space is attained.

[0026]

[Effect of the Invention] Since it constituted as mentioned above according to this invention as explained above, processing of TV schedule data reconstitution can be reduced and a prescribed indication time can be shortened.

[Brief description of the drawings]

[Drawing 1] is the block diagram showing one example of this invention.

[Drawing 2] is the block diagram showing the configuration of the synthesis part 59 shown on drawing 1.

[Drawing 3] is drawing showing an example of TV schedule data.

[Drawing 4] is the mimetic diagram showing the outline of reconstruction of TV schedule data.

[Description]

10 Accumulation and holding part

20 Encoding and data generation means

30 Digital transmission way

40 Data reception device

41 Signal transformation and packet decoding separation part

42 Selection circuit

50 Recording processor

51 Data separation part

52, 53, 54 Data accumulation part

55, 56, 57 Data selection part

58 Recording part

59 Synthesis part

60 Selection designating device

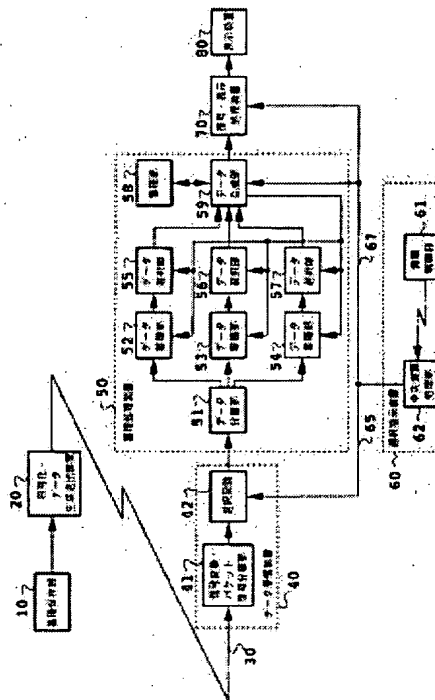
61 Remote controller part

62 Central data processing part

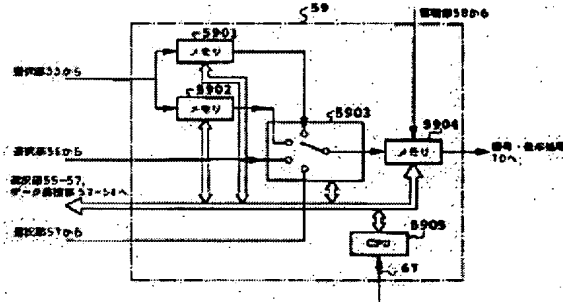
70 Decoding and displaying processing part

80 Display

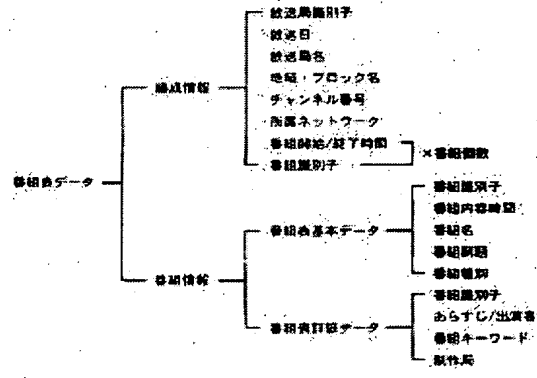
Drawing 1



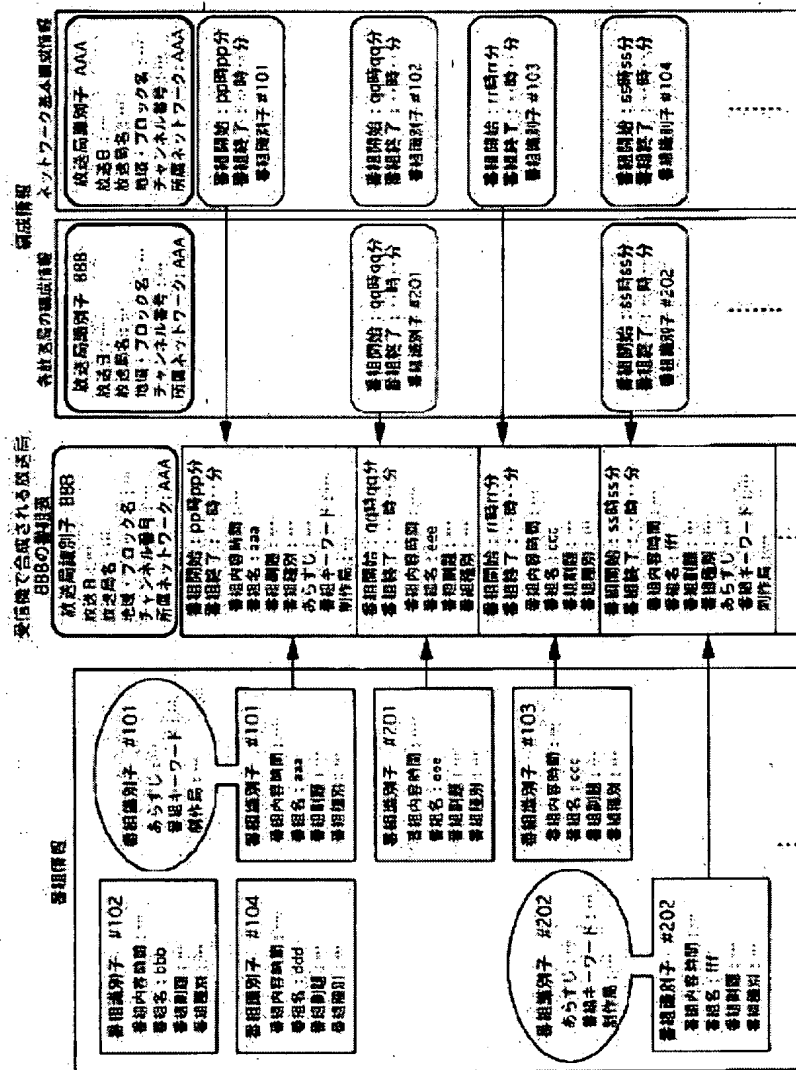
Drawing 2



Drawing 3



Drawing 4



PATENT ABSTRACTS OF JAPAN

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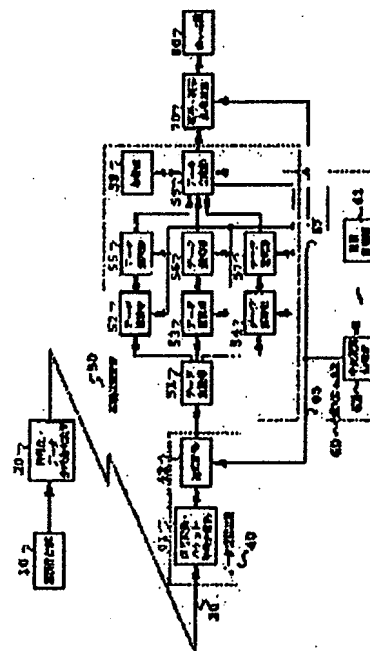
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OTANI AKIRA

(54) TRANSMISSION METHOD FOR PROGRAM LIST DATA AND TRANSMISSION AND RECEPTION DEVICE

(57)Abstract:

PURPOSE: To reduce the reconstitution processing of program list data and to shorten prescribed indication time.

CONSTITUTION: On a transmission side, an encoding and data generation means 20 encodes and transmits program list data which are accumulated and preserved in an accumulation and holding part 10. On a reception side, formation information on a broadcasting station, which is received by a data reception device 40, is stored in a data accumulation part 52 and network basic formation information and formation information of the respective broadcasting stations are extracted from received formation information of the broadcasting station based on belonging network information. Program list basic data and program list minute data, which constitute program information, are stored in data accumulation parts 53 and 54. A data synthesis part 59 synthesizes either formation information of the respective broadcasting stations or network basic formation information in accordance with a condition that formation information on the respective broadcasting stations are adopted when both formation information have the same program start time.



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CLAIMS

[Claim(s)]

[Claim 1] In transmitting the race card data used by the broadcast receiving side in a transmitting side While dividing race card data into the organization information data which consist of the broadcasting station name of a program, a broadcast day, broadcast time of day, etc., and program information data which a program name, the contents time amount of a program, and a viewer need at the time of program selection, such as accompanying information Add a broadcasting station identifier and a program identifier to said organization information data, and add a program identifier to said program information data, respectively, and it transmits. The transmission approach of the race card data characterized by reconfiguring the race card data of the specific broadcasting station which a viewer chooses from said both information data, referring to said each identifier in a receiving side.

[Claim 2] The sending set for operation of the approach according to claim 1 characterized by coming to contain a means to divide race card data into organization information data and program information data, a means to add a broadcasting station identifier and a program identifier to the separated organization information data, and to transmit to them, and a means add a program identifier to the separated program information data, and transmit to them.

[Claim 3] The receiving set for operation of the approach according to claim 1 characterized by coming to contain a means to reconfigure the race card data of said selected specific broadcasting station from the organization information data received referring to a means to select the specific broadcasting station which wishes viewing and listening of race card data, and a broadcasting station identifier and a program identifier, and program information data.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the race card data-broadcasting system which offers race card service.

[0002]

[Description of the Prior Art] A television set receives the broadcast race card data, and the system which receives race card service is proposed. In this system, since the broadcasting station name and the information on a broadcasting station proper like a channel were need even if two or more broadcasting stations which completely take the same programming existed, as for race card data, parts for each broadcasting station of all were transmitted according to the individual.

[0003]

[Problem(s) to be Solved by the Invention] Therefore, the necessary transmission amount of data is the

several times as many broadcasting station of the race card amount of data to one broadcasting station as this. For this reason, the transmission capacity of a transmission line and the memory for are recording of a receiver will increase, or a transmission duration will increase. Moreover, when the contents of a program itself were changed by modification of a performer etc., all race card data had to be updated.

[0004] The purpose of this invention solves the above troubles, mitigates processing of data restructuring, and is to offer the race card data-broadcasting system which can shorten a presentation duration.

[0005]

[Means for Solving the Problem]

In this invention transmitting the race card data used by the broadcast receiving side 1) In a transmitting side While dividing race card data into the organization information data which consist of the broadcasting station name of a program, a broadcast day, broadcast time of day, etc., and program information data which a program name, the contents time amount of a program, and a viewer need at the time of program selection, such as accompanying information It is characterized by reconfiguring the race card data of the specific broadcasting station which a viewer chooses from said both information data, adding a broadcasting station identifier and a program identifier to said organization information data, and adding a program identifier to said program information data, respectively, transmitting, and referring to said each identifier in a receiving side.

[0006] 2) The sending set for operation of an approach given in the above 1 is characterized by coming to contain a means divide race card data into organization information data and program information data, a means add a broadcasting station identifier and a program identifier to the separated organization information data, and transmit to them, and a means add a program identifier to the separated program information data, and transmit to them.

[0007] 3) It is characterized by the receiving set for operation of the approach of one above-mentioned publication coming to contain a means to reconfigure the race card data of said selected specific broadcasting station from the organization information data received referring to a means to select the specific broadcasting station which wishes viewing and listening of race card data, and a broadcasting station identifier and a program identifier, and program information data.

[0008]

[Function] In this invention, are recording preservation of the race card data is carried out with an are recording preservation means with a sending set. Encode the race card data of an are recording preservation means with a coding means, and the encoded race card data are sent out with a sending-out means. The organization information and program information on a broadcasting station which were received with the receiving set are stored in the 1st storing means. Based on affiliation network information, network basic organization information and the organization information on each broadcasting station are extracted from the organization information on the received broadcasting station. Either the organization information on each broadcasting station, or network basic organization information When it has the program start time when both organization information is the same, according to the conditions of adopting the organization information on each broadcasting station, it takes out to time series, and takes out with a means, and the program information based on the organization information and this information which were taken out is stored in the 2nd storing means.

[0009]

[Example] Hereafter, the example of this invention is explained with reference to a drawing.

[0010] Drawing 1 shows one example of this invention. In drawing 1 , 10 is the are recording preservation

section and is for carrying out are recording preservation of the race card data. The race card data by which are recording preservation was carried out are constituted by the organization information and program information on a work equipment proper, and show the configuration of organization information and program information to drawing 3. 20 is coded data generation sending-out equipment, encodes race card data to the data format suitable for transmission, and changes coding race card data into the packet signal of fixed length. As a data coding method in this case, various coding methods, such as a graphic form containing an alphabetic character and a still picture or voice, can be adapted.

[0011] 40 is a data sink and is constituted by the selection circuitry 42 with signal transformation and the packet decode separation section 41. After signal transformation and the packet decode separation section 41 receive race card data digital transmission on the street and carries out the error correction of the race card data, it performs inverse transformation by the signal transformation section and the highly uniform of coded data generation sending-out equipment 20, changes it into the packet-sized race card data, unifies one or more obtained packets, and restores coding race card data. A selection circuitry 42 chooses only specific data according to actuation of the selection designating device 60 by the user.

[0012] The selection designating device 60 is constituted by the remote-control section 61 and the central data-processing section 62. The remote-control section 61 performs remote control. The central data-processing section 62 directs the race card which a user wishes, receives the signal from the remote-control section 61, and outputs the corresponding control instruction, and controls and manages the whole receive section integrative.

[0013] 50 is an are recording processor and is constituted by the data separation section 51, the data accumulation sections 52, 53, and 54, the data selection sections 55, 56, and 57, the are recording section 58, and the merge section 59. The data separation section 51 divides into organization information, the race card master data, and race card detail data the coding race card data chosen by the selection circuitry 42 based on a data identifier. The data accumulation sections 52, 53, and 54 are for storing the organization information acquired by the data separation section 51 separating, the race card master data, and race card detail data, respectively. The merge section 59 is compounded to one race card data from the organization information taken out by the data selection sections 55, 56, and 57, the race card master data, and race card detail data. In the merge section 59, it is possible to save the constituted race card data once using the are recording section 58 if needed, and to use this are recording data to the presentation demand of the multiple times to the same race card from a user.

[0014] 70 is decode and display process equipment, and decodes and carries out the display process of the race card data of the merge section 59 or the are recording section 58. 80 is a display and is for displaying based on the signal from decode and display-processing equipment 70.

[0015] Drawing 2 shows the configuration of the merge section 59 shown in drawing 1. In drawing 2, 5901 is memory and is for storing the information chosen by the data selection section 55. 5902 is memory and is for storing the information chosen by the data selection section 55 according to the affiliation network. 5903 is the switch section and is for switching and choosing the data from memory 5901 and 5902 and the selection sections 56 and 57. 5904 is memory and stores the data from the switch section 5904, and the data from the are recording section 58. 5905 -- CPU (central processing unit) it is -- while controlling the writing of the data of memory 5901, 5902, and 5904, read-out and the data accumulation sections 52, 53, and 54, and the data selection sections 55, 56, and 57 according to the directions from the selection designating device 60, a switch of the switch section 5903 is controlled.

[0016] First, actuation of a transmitting side is explained. It encodes with coded data generation sending-out equipment 20, and the race card data of the are recording preservation section 10 are changed into the packet of fixed length. This packet consists of the packet header section which shows the description of the data itself, such as a data identifier which shows a property or the purpose of that data etc., and a data length, and data division of the race card data itself. A packet header is automatically given by coded data generation sending-out equipment 20. And the packet containing race card data of these single strings is reorganized by the signal format which was most suitable for the digital transmission way 30 with coded data generation sending-out equipment 20, and an error correcting code is added if needed. For example, when transmitting race card data by digital transmission ways, such as a data channel of satellite broadcasting service and MUSE high-definition television broadcasting, an interleave is given and it changes into a bit stream, after adding the error correcting code by the difference set cyclic code.

[0017] Next, actuation of a receiving side is explained. If the race card data on the digital transmission way 30 are received by the data sink 40, to input data, the signal transformation and the packet decode separation section 41 of a data sink 40 will perform an error correction, and inverse transformation by the signal transformation section and the highly uniform of coded data generation sending-out equipment 20 will be performed. Subsequently, it changes into the packet-ized race card data, one or more packets which constitute this packet-ized race card data are unified further, and coding race card data are restored.

[0018] And only specific data are chosen from this coding race card data by the selection circuitry 42 according to selection directions of the user from the selection designating device 60. For example, since there are an area, a block name, etc. by which the broadcasting station is characterized as shown in drawing 3, only the data of classification which users, such as organization information only on a user's required area, need can be chosen as organization information from the organization information for the whole country. Are recording processing of the specific data chosen by the selection circuitry 42 is carried out by the are recording processor 50. That is, it separates into the organization information shown in drawing 3 based on a data identifier by the data separation section 51, the race card master data, and race card detail data, and coding race card data are stored in ** and the data accumulation sections 52, 53, and 54, respectively. And according to selection directions of the user from the selection designating device 60, the race card data of the broadcasting station which a user wishes by reference using a broadcasting station identifier are taken out from the data accumulation sections 52, 53, and 54 by the data selection sections 55, 56, and 57, and, in one race card data, it is compounded by the merge section 59 by reference using the program identifier shown in drawing 4.

[0019] Next, the data synthesis procedure by CPU5905 of the synthetic section 59 shown in drawing 2 is explained. "The organization information on a broadcasting station" aiming at the composition taken out from the data accumulation section 52 by the data selection section 55 is stored in memory 5901. Moreover, according to the affiliation network information on "the organization information on a broadcasting station", the "network basic organization information" taken out from the data accumulation section 52 by the data selection section 55 is stored in memory 5902. And the broadcasting station identifier of "the organization information on a broadcasting station" stored in memory 5901, a broadcast day, a broadcasting station name, an area and a block name, a channel number, and the information on an affiliation network are stored in memory 5904.

[0020] The earliest program start time b1 is searched among the program start time of each program of the "network basic organization information" stored in memory 5902. And while carrying out the additional writing

of the information in connection with the program which has the earliest program start time among the program start time which searched, and was searched and obtained from the start time of each program of "the organization information on a broadcasting station" in which program start time earlier than the end time of the program which has the earliest start time b1 searched and obtained was stored by memory 5901, and the program start time b1 at memory 5904, the information concerned is deleted from memory 5901 or memory 5902.

[0021] Subsequently, the latest program end time e1 is searched among the end time of each program stored in memory 5904. And the earliest program start time b2 is searched from the program start time of each program of the "network basic organization information" in which it was stored by memory 5902 among the program start time after program end time e1 searched and obtained, and the end time Tx of the program which has the program start time b2 is taken out. While carrying out the additional writing of the information in connection with the program which has the earliest program start time among the program start time which searched, and was searched and obtained from the start time of each program of "the organization information on a broadcasting station" in which program start time earlier than this program end time Tx was stored by memory 5901, and the program start time b2 at memory 5904, the information concerned is deleted from memory 5901 or memory 5902.

[0022] Henceforth, the above procedure is repeated. However, when the data which replace with with the latest program end time at the program end time Tx among the information in connection with each program stored in memory 5904, and are chosen from memory 5901 when the data chosen from memory 5902 are lost are lost, always suppose the information on memory 5902 at memory 5904 that additional writing is carried out. It continues until the information which newly adds such a procedure is lost.

[0023] And sequential selection of the program identifier of the information in connection with each program is made from the head of memory 5904 among the information on memory 5904, and the program master data is taken out from the data accumulation section 53 by the data selection section 56 among the program information according to each identifier, additional writing is carried out at memory 5904, and race card detail data are taken out from the data accumulation section 54 by the data selection section 57, and carry out additional writing at memory 5904. Since the output of the merge section 59 is encoded race card data, well-known decode processing is performed by decode and display process equipment 70, and it is further changed into the data format suitable for a display, and, finally is displayed on a display 80 by the selection signal 67.

[0024] In addition, the digital transmission way 30 under above-mentioned explanation of any being sufficient, such as a cable system, a wireless system, and a package system, is natural.

[0025] Thus, since it constituted, the race card of a user's living area etc. can output only the data which a user uses most frequently to the are recording processor 50 by the selection circuitry 42. Therefore, the memory space for are recording is [that what is necessary is just to carry out are recording preservation only of some kinds of the organization and program information to which it can view and listen regionally] sharply reducible. On the contrary, all the race card data transmitted by directions of a user can be referred to to arbitration, and use of the race card which was excellent in flexibility with small are recording memory space is attained.

[0026]

[Effect of the Invention] Since it constituted as mentioned above according to this invention as explained above, processing of race card data restructuring can be mitigated and a presentation duration can be

shortened.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing one example of this invention.

[Drawing 2] It is the block diagram showing the configuration of the merge section 59 shown in drawing 1.

[Drawing 3] It is drawing showing an example of race card data.

[Drawing 4] It is the mimetic diagram showing the outline of reconstruction of race card data.

[Description of Notations]

10 Are Recording Preservation Section

20 Coded Data Generation Sending-Out Equipment

30 Digital Transmission Way

40 Data Sink

41 Signal Transformation and Packet Decode Separation Section

42 Selection Circuitry

50 Are Recording Processor

51 Data Separation Section

52, 53, 54 Data accumulation section

55, 56, 57 Data selection section

58 Are Recording Section

59 Merge Section

60 Selection Designating Device

61 Remote-Control Section

62 Central Data-Processing Section

70 Decode and Display-Processing Equipment

80 Display

[Translation done.]

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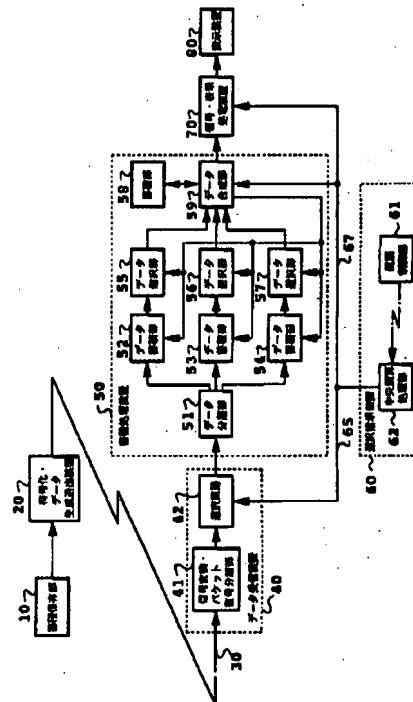
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(54)【発明の名称】 番組表データの伝送方法、送信および受信装置

(57)【要約】

【目的】 番組表データの再構成処理を軽減し提示所要時間を短縮する。

【構成】 送信側では、蓄積保存部10に蓄積保存された番組表データを符号化・データ生成送出手段20により符号化し送出する。受信側では、データ受信装置40により受信された放送局の編成情報をデータ蓄積部52に格納し、受信された放送局の編成情報から所属ネットワーク情報に基づきネットワーク基本編成情報と各放送局の編成情報とを抽出する。番組情報を構成する番組表基本データと番組表詳細データをそれぞれデータ蓄積部53、54に格納する。そして、データ蓄積部52から、各放送局の編成情報またはネットワーク基本編成情報のいずれかを、両編成情報が同一の番組開始時刻を有する場合は各放送局の編成情報を採用するという条件に従って時系列にデータ合成部59により合成する。



【特許請求の範囲】

【請求項1】 放送受信側で利用する番組表データを伝送するにあたり、送信側では、番組表データを放送番組の放送局名、放送日、放送時刻等からなる編成情報データと、番組名、番組内容時間、視聴者が番組選択時に必要とする付随情報等の番組情報データとに分離するとともに、前記編成情報データには放送局識別子および番組識別子を、また前記番組情報データには番組識別子をそれぞれ付加して送信し、受信側では前記各識別子を参照しつつ前記両情報データから視聴者の選択する特定放送局の番組表データを再構成することを特徴とする番組表データの伝送方法。

【請求項2】 番組表データを編成情報データと番組情報データとに分離する手段と、分離された編成情報データに放送局識別子および番組識別子を付加して送信する手段と、分離された番組情報データに番組識別子を付加して送信する手段とを含んでなることを特徴とする請求項1に記載の方法の実施のための送信装置。

【請求項3】 番組表データの視聴を希望する特定放送局を選定する手段と、放送局識別子および番組識別子を参照しつつ受信された編成情報データおよび番組情報データから前記選定された特定放送局の番組表データを再構成する手段とを含んでなることを特徴とする請求項1に記載の方法の実施のための受信装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、番組表サービスを行う番組表データ放送システムに関する。

【0002】

【従来の技術】放送された番組表データを、例えば、テレビジョン受信機で受信し、番組表サービスを受けるシステムが提案されている。このシステムでは、全く同一の番組編成をとる複数の放送局が存在しても、放送局名やチャンネルのような放送局固有の情報が必要なので、番組表データは各放送局分をすべて個別に伝送していた。

【0003】

【発明が解決しようとする課題】従って、所要伝送データ量は1つの放送局に対する番組表データ量の放送局数倍である。このため、伝送路の伝送容量、受信機の蓄積用メモリが増大するか、伝送所要時間が増加することになる。また出演者の変更等により番組の内容自体が変更された場合は、番組表データを全て更新しなければならなかった。

【0004】本発明の目的は、上記のような問題点を解決し、データ再構成の処理を軽減し、提示所要時間を短縮することができる番組表データ放送システムを提供することにある。

【0005】

【課題を解決するための手段】

1) 本発明は、放送受信側で利用する番組表データを伝送するにあたり、送信側では、番組表データを放送番組の放送局名、放送日、放送時刻等からなる編成情報データと、番組名、番組内容時間、視聴者が番組選択時に必要とする付随情報等の番組情報データとに分離するとともに、前記編成情報データには放送局識別子および番組識別子を、また前記番組情報データには番組識別子をそれぞれ付加して送信し、受信側では前記各識別子を参照しつつ前記両情報データから視聴者の選択する特定放送局の番組表データを再構成することを特徴とする。

【0006】2) 上記1)に記載の方法の実施のための送信装置は、番組表データを編成情報データと番組情報データとに分離する手段と、分離された編成情報データに放送局識別子および番組識別子を付加して送信する手段と、分離された番組情報データに番組識別子を付加して送信する手段とを含んでなることを特徴とする。

【0007】3) 上記1)に記載の方法の実施のための受信装置は、番組表データの視聴を希望する特定放送局を選定する手段と、放送局識別子および番組識別子を参照しつつ受信された編成情報データおよび番組情報データから前記選定された特定放送局の番組表データを再構成する手段とを含んでなることを特徴とする。

【0008】

【作用】本発明では、送信装置にて、番組表データを蓄積保存手段により蓄積保存し、蓄積保存手段の番組表データを符号化手段により符号化し、符号化された番組表データを送出手段により送出し、受信装置にて、受信された放送局の編成情報および番組情報を第1格納手段に格納し、受信された放送局の編成情報から所属ネットワーク情報に基づきネットワーク基本編成情報と各放送局の編成情報とを抽出し、各放送局の編成情報またはネットワーク基本編成情報のいずれかを、両編成情報が同一の番組開始時刻を有する場合は各放送局の編成情報を採用するという条件に従って時系列に取り出し手段により取り出し、取り出された編成情報および該情報に基づいた番組情報を第2格納手段に格納する。

【0009】

【実施例】以下、本発明の実施例を図面を参照して説明する。

【0010】図1は本発明の一実施例を示す。図1において、10は蓄積保存部であり、番組表データを蓄積保存するためのものである。蓄積保存された番組表データは制作装置固有の編成情報と番組情報とにより構成されており、編成情報と番組情報の構成を図3に示す。20は符号化・データ生成送出装置であり、番組表データを伝送に適したデータ形式に符号化し、符号化番組表データを一定長のパケット信号に変換するものである。この場合のデータ符号化方式としては、文字および静止画を含む図形か、あるいは、音声等の各種符号化方式が適応可能である。

3

【0011】40はデータ受信装置であり、信号変換・パケット復号分離部41と、選択回路42により構成されている。信号変換・パケット復号分離部41はデジタル伝送路上の番組表データを受信し、番組表データを誤り訂正した後、符号化・データ生成送出装置20の信号変換部と同一形式による逆変換を行い、パケット化された番組表データに変換し、得られた1つ以上のパケットを統合して符号化番組表データを復元するものである。選択回路42は、利用者による選択指示装置60の操作に従って特定のデータのみを選択するものである。

【0012】選択指示装置60は遠隔制御部61と中央演算処理部62により構成されている。遠隔制御部61は遠隔制御を行うものである。中央演算処理部62は、利用者が希望する番組表を指示し、遠隔制御部61からの信号を受信し、対応した制御命令を出力し、かつ、受信部全体を統合的に制御、管理するものである。

【0013】50は蓄積処理装置であり、データ分離部51と、データ蓄積部52、53、54と、データ選択部55、56、57と、蓄積部58と、データ合成部59とにより構成されている。データ分離部51は選択回路42により選択された符号化番組表データをデータ識別子に基づき編成情報と、番組表基本データと、番組表詳細データとに分離するものである。データ蓄積部52、53、54はデータ分離部51により分離して得られた編成情報と、番組表基本データと、番組表詳細データをそれぞれ格納するためのものである。データ合成部59はデータ選択部55、56、57により取り出された編成情報と、番組表基本データと、番組表詳細データから1つの番組表データに合成するものである。データ合成部59では、一度、構成した番組表データを必要に応じて蓄積部58を用いて保存し、利用者からの同一番組表に対する複数回の提示要求に対してこの蓄積データを利用することが可能である。

【0014】70は復号・表示処理装置であり、データ合成部59または蓄積部58の番組表データを復号し、表示処理するものである。80は表示装置であり、復号・表示処理装置70からの信号に基づき表示するためのものである。

【0015】図2は図1に示すデータ合成部59の構成を示す。図2において、5901はメモリであり、データ選択部55により選択された情報を格納するためのものである。5902はメモリであり、所属ネットワークに従ってデータ選択部55により選択された情報を格納するためのものである。5903は切り換え部であり、メモリ5901、5902および選択部56、57からのデータを切り換え選択するためのものである。5904はメモリであり、切り換え部5904からのデータと、蓄積部58からのデータを格納するものである。5905はCPU(central processing unit)であり、選択指示装置60からの指示に従って、メモリ5901、

4

5902、5904のデータの書き込み、読み出しおよびデータ蓄積部52、53、54、データ選択部55、56、57を制御するとともに、切り換え部5903の切り換えを制御するものである。

【0016】まず、送信側の動作を説明する。蓄積保存部10の番組表データは符号化・データ生成送出装置20により符号化され、一定長のパケットに変換される。このパケットは、そのデータの性質または目的等を示すデータ識別子およびデータ長等のデータ自体の特徴を示すパケットヘッダ部と、番組表データ自体のデータ部よりなる。パケットヘッダは符号化・データ生成送出装置20により自動的に付与される。そして、番組表データを含むこれら一連のパケットは、符号化・データ生成送出装置20によりデジタル伝送路30に最も適した信号形式に再編成され、必要に応じて誤り訂正符号が付加される。例えば、番組表データを衛星放送およびMUSE方式ハイビジョン放送のデータチャネル等のデジタル伝送路により伝送する場合は、差集合巡回符号による誤り訂正符号を付加した後、インタリーブを施してビットストリームに変換する。

【0017】次に受信側の動作を説明する。デジタル伝送路30上の番組表データがデータ受信装置40により受信されると、入力データに対して、データ受信装置40の信号変換・パケット復号分離部41により誤り訂正を行ない、符号化・データ生成送出装置20の信号変換部と同一形式による逆変換を行う。ついで、パケット化された番組表データに変換し、さらに、このパケット化された番組表データを構成する1つ以上のパケットを統合し符号化番組表データを復元する。

【0018】そして、この符号化番組表データから、選択指示装置60からの利用者の選択指示に従って選択回路42により特定データのみが選択される。例えば、編成情報には、図3に示すようにその放送局を特徴づける地域、ブロック名等があるため、全国分の編成情報から利用者の必要な地域のための編成情報等の利用者が必要とする種類のデータのみを選択することができる。選択回路42により選択された特定データは、蓄積処理装置50により蓄積処理される。すなわち、符号化番組表データはデータ分離部51によりデータ識別子に基づき、図3に示す編成情報と、番組表基本データと、番組表詳細データに分離され、それぞれ、データ蓄積部52、53、54に蓄積される。そして、選択指示装置60からの利用者の選択指示に従って、放送局識別子を利用した参照により利用者の希望する放送局の番組表データがデータ蓄積部52、53、54からデータ選択部55、56、57により取り出され、図4に示す番組識別子を利用した参照により1つの番組表データにデータ合成部59により合成される。

【0019】次に、図2に示す合成部59のCPU5905によるデータ合成手順を説明する。データ選択部5

5

5によりデータ蓄積部52から取り出した、合成を目的とする「放送局の編成情報」をメモリ5901に格納する。また、「放送局の編成情報」の所属ネットワーク情報に従って、データ選択部55によりデータ蓄積部52から取り出した「ネットワーク基本編成情報」をメモリ5902に格納する。そして、メモリ5901に格納した「放送局の編成情報」の放送局識別子と、放送日と、放送局名と、地域・ブロック名と、チャンネル番号と、所属ネットワークの情報をメモリ5904に格納する。

【0020】メモリ5902に格納された「ネットワーク基本編成情報」の個々の番組の番組開始時刻のうち最も早い番組開始時刻b1を検索する。そして、検索して得られた最も早い開始時刻b1を有する番組の終了時刻より早い番組開始時刻を、メモリ5901に格納された「放送局の編成情報」の個々の番組の開始時刻から検索し、検索して得られた番組開始時刻と番組開始時刻b1のうち、最も早い番組開始時刻を有する番組に関わる情報をメモリ5904に追加書き込みするとともに、当該情報をメモリ5901またはメモリ5902から削除する。

【0021】ついで、メモリ5904に格納されている個々の番組の終了時刻のうち最も遅い番組終了時刻e1を検索する。そして、検索して得られた番組終了時刻e1以後の番組開始時刻のうちで最も早い番組開始時刻b2を、メモリ5902に格納された「ネットワーク基本編成情報」の個々の番組の番組開始時刻から検索し、その番組開始時刻b2を有する番組の終了時刻Txを取り出す。この番組終了時刻Txより早い番組開始時刻を、メモリ5901に格納された「放送局の編成情報」の個々の番組の開始時刻から検索し、検索して得られた番組開始時刻と番組開始時刻b2のうち、最も早い番組開始時刻を有する番組に関わる情報をメモリ5904に追加書き込みするとともに、当該情報をメモリ5901またはメモリ5902から削除する。

【0022】以後、以上の手順を繰り返す。ただし、メモリ5902から選択するデータが無くなった場合には、メモリ5904に格納されている個々の番組に関わる情報のうち、最も遅い番組終了時刻をもって番組終了時刻Txに代え、メモリ5901から選択するデータが無くなった場合には、常に、メモリ5902の情報をメモリ5904に追加書き込みすることとする。このような手順を新たに追加する情報がなくなるまで継続する。

【0023】そして、メモリ5904の情報のうち個々の番組に関わる情報の番組識別子をメモリ5904の先頭から順次選択し、それぞれの識別子に応じた番組情報のうち、番組基本データはデータ蓄積部53からデータ選択部56により取り出してメモリ5904に追加書き込みし、番組表詳細データはデータ蓄積部54からデー

6

タ選択部57により取り出してメモリ5904に追加書き込みする。データ合成部59の出力は、符号化された番組表データであるため、復号・表示処理装置70により周知の復号処理が行われ、さらに、表示に適したデータ形式へと変換され、選択信号67により最終的に表示装置80上で表示される。

【0024】なお、上記説明中のデジタル伝送路30は、有線系、無線系、パッケージ系等のいずれでもよいことはもちろんである。

【0025】このように構成したので、選択回路42により、例えば、利用者の在住地域の番組表等、利用者が最も頻繁に利用するデータのみを蓄積処理装置50に出力することができる。そのため、地域で視聴可能な数種類の編成および番組情報のみを蓄積保存すれば良く、蓄積用メモリ容量を大幅に削減することができる。逆に、利用者の指示により伝送される全ての番組表データを任意に参照することができ、少ない蓄積メモリ容量で柔軟性に優れた番組表の利用が可能となる。

【0026】

【発明の効果】以上説明したように、本発明によれば、上記のように構成したので、番組表データ再構成の処理を軽減し、提示所要時間を短縮することができる。

【図面の簡単な説明】

【図1】本発明の一実施例を示すブロック図である。

【図2】図1に示すデータ合成部59の構成を示すブロック図である。

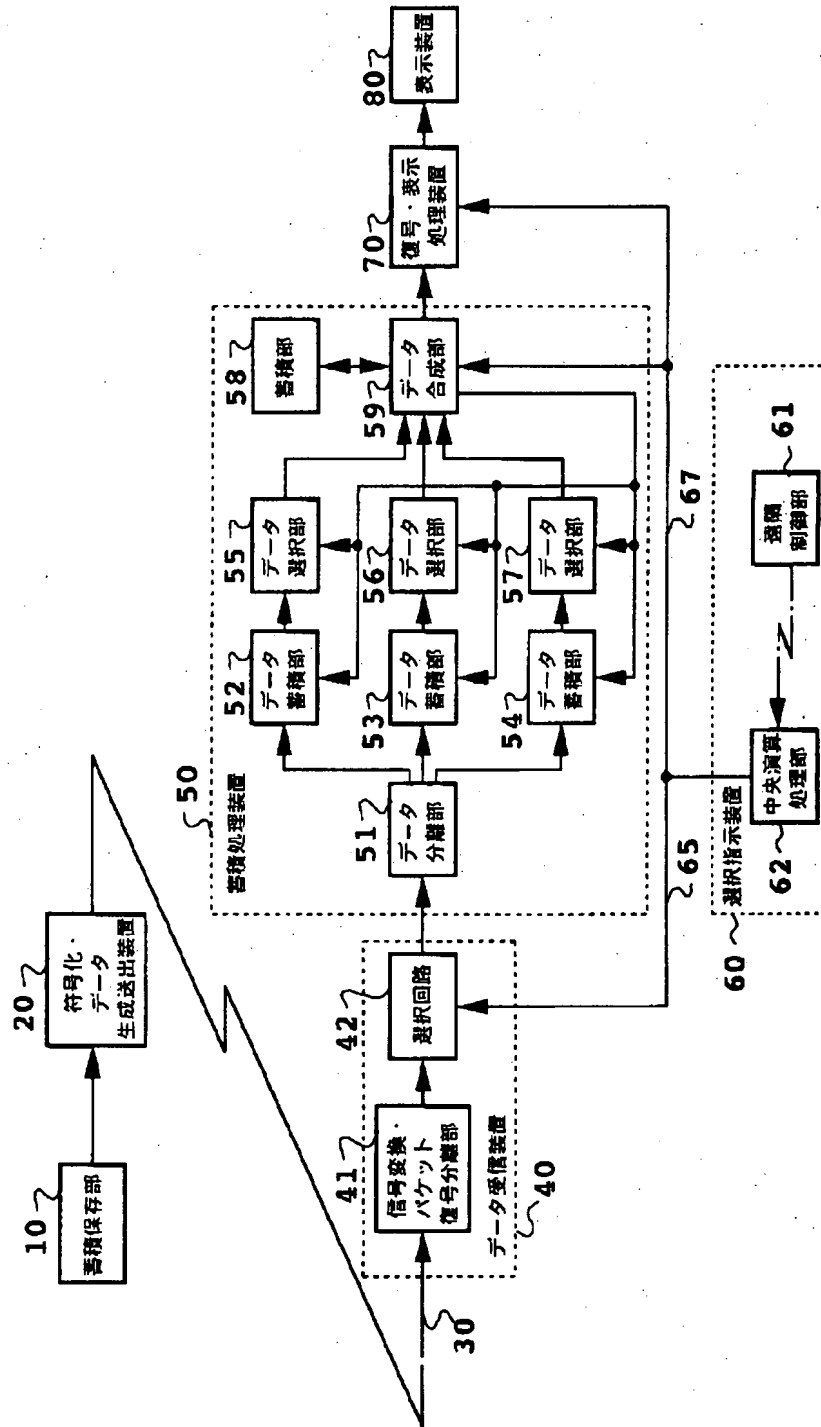
【図3】番組表データの一例を示す図である。

【図4】番組表データの再構成の概略を示す模式図である。

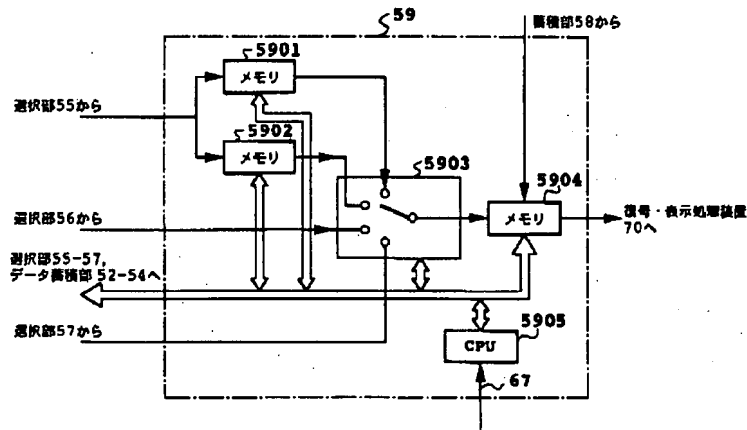
【符号の説明】

- 10 蓄積保存部
- 20 符号化・データ生成送出装置
- 30 デジタル伝送路
- 40 データ受信装置
- 41 信号変換・パケット復号分離部
- 42 選択回路
- 50 蓄積処理装置
- 51 データ分離部
- 52, 53, 54 データ蓄積部
- 55, 56, 57 データ選択部
- 58 蓄積部
- 59 データ合成部
- 60 選択指示装置
- 61 遠隔制御部
- 62 中央演算処理部
- 70 復号・表示処理装置
- 80 表示装置

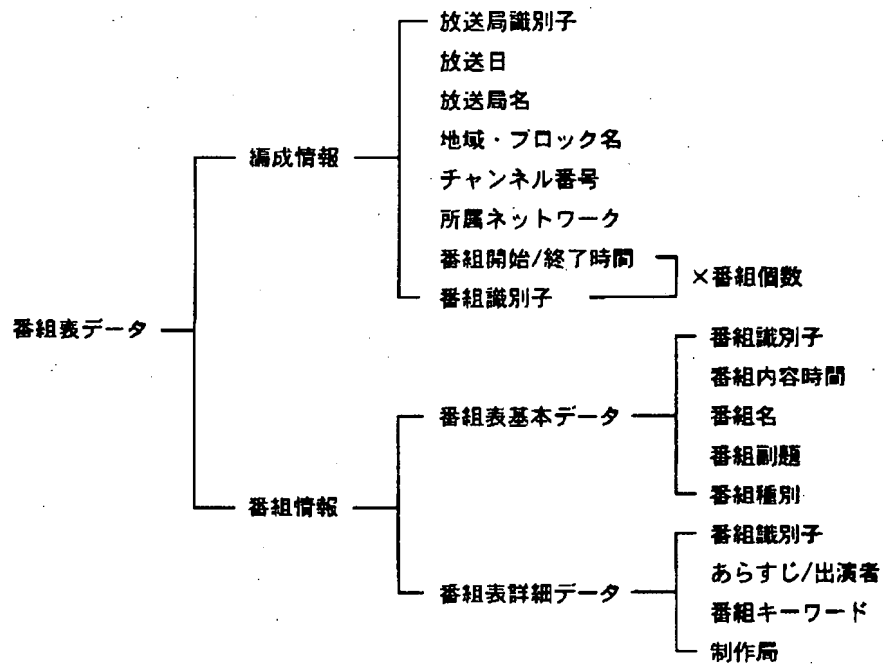
【図1】



【図2】



【図3】



【図4】

